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ABSTRACT

An analysis of indirect objects in San Jeronimo Mazatec describes the superficial characteristics of indirect objects and the constructions in which indirect objects occur. It is argued that they occur as prepositional phrases that are obligatorily incorporated into the verb in a specific way. The constructions containing indirect objects are examined in the framework of relational grammar, with the claim that they occur in simple clauses and in clauses with Benefactive-3 Advancement, 2-3 Retreat (personal and impersonal), and (impersonal) Inversion. It is noted that 3-chomeurs, which sometimes occur, are markedly different from final indirect objects. It is also concluded that all of these claims are novel for Mazatec, and that such constructions have never before been posited for any Otomanguean language. (Author/MSE)

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Indirect Objects and Incorporation in Mazatec[1]

Daniel Agee and Stephen Marlett

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1 Introduction

This paper deals with indirect objects in Mazatec. It has two fairly modest goals. The first is to describe the superficial characteristics of indirect objects in Mazatec. We claim that they occur as prepositional phrases which are obligatorily incorporated into the verb (in a specific way described below). The second goal is to describe the constructions in which indirect objects occur in Mazatec. We do this primarily within the framework of Relational Grammar (Perlmutter 1983a, Perlmutter and Rosen 1984) claiming that indirect objects occur in simple clauses and also in clauses with Benefactive-3 Advancement, 2-3 Retreat (personal and impersonal), and (impersonal) Inversion. 3-chomeurs, which sometimes occur, are marked differently from final indirect objects. All of these claims are novel for Mazatec. In addition, this is the first time for which such constructions have been posited for any Otomanguean language.

2 Overview of Mazatec

The Mazatec spoken in San Jeronimo Tecoatl (district of Teotitlán de Flores Magón), Oaxaca, Mexico, is similar in many ways to the other Mazatec languages of the area. Nevertheless, the facts and analyses discussed in this paper do not necessarily apply to the other languages. We first present some typological characteristics.

Clausal word order does not appear to be as fixed in San Jeronimo Mazatec (henceforth SJM) as in many

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other Otomanguean languages (which are most commonly VSO). It is prepositional, adjectives (quantifiers excluded) follow the head noun, and the possessed noun precedes the possessor.

The preposition 'of' (which figures importantly in the rest of this paper) precedes most possessors, although most body parts and some kinship terms do not require the preposition 'of' before the possessor. (As we see later, it also introduces indirect objects.) This preposition is an enclitic phonologically and has two shapes, depending on the person of its complement. It is **la** when the complement is second person singular or third person, and **na** otherwise, as shown in (1). A simple example is given in (2).

		shape	complement
(1)	'of'	la	2s, 3
		na	1s, 1pi, 1pe, 2p

(2) a. koyo hmá **la** čiliš
horse black of
'Julio's black horse'

b. koyo hmá **na -hẽ**
horse black of 1pe
'our black horse'

SJM is similar to the Zapotec languages in that it has two sets of pronouns--clitic and nonclitic, which are described below-- but (unlike Zapotec) it also has person agreement with the subject. (We do not discuss here the issue of whether it is the initial or final level that is relevant to this agreement; we do not have the necessary range of data yet to discuss this important issue.) This person agreement is shown primarily by stem changes, and is of a very limited type. The most usual pattern is for there to be two stems, one of which is used when the subject is first person singular or third person, and the other stem used otherwise. The stem change may be fairly minor, as in (3a), or radical, as in (3b).

		1s, 3 stem	2s, 1pi, 1pe, 2p stem
(3) a.	'see'	kocehẽ	čicehẽ
	'cry'	khindaya	čhindaya
	'throw'	sikathẽ	nikathẽ
	'work'	sišá	nišá

b.	'talk'	čha	nokhoa
	'give'	cha	?vi
	'take'	?va	č?a

A few verbs have more stems and show the agreement more fully.

(4) a.	'go'	hvi	1s, 3 stem
		?mi	2s stem
		onki	1pi, 1pe, 2p stem
b.	'say'	šã	1s stem
		co	3 stem
		si	2s stem
		višó	1pi, 1pe, 2p stem

Stem glosses indicate subject agreement in the examples below, but not all of the ambiguity is expressed in the translations.

The nonclitic pronouns are given in (5) and the clitic pronouns in (6). We distinguish these pronouns in these charts and in the examples below by glossing them differently, as shown.

(5) Nonclitic pronouns

?ã	I, me
hi	you
he	she, he, him, her
hña	we, us (inclusive)
hĩ	we, us (exclusive)
hño	you (plural)
hña	they, them

(6) Clitic pronouns[2]

-a	1s
-i	2s
-Ø	3 (singular or plural)
-á	1pi
-hẽ	1pe
-o	2p

The nonclitic pronouns occur in various positions. They are used to give emphasis to the subject, as in (7), or to the direct object, as in (8).

(7) Mahẽ, **?ã** ko-n<u>i</u>y<u>a</u> -a
no I FUT-wash=dishes 1s
'No, <u>I'll</u> wash the dishes.'

(8) s-kot?a -a **he**
FUT-test/1s,3 1s him
'I will test him'

Nonclitic pronouns are also required for the object of most prepositions along with the clitic pronoun. In (9) both are necessary. (10) illustrates that the preposition **la**/**na** 'of' requires only the clitic pronoun.

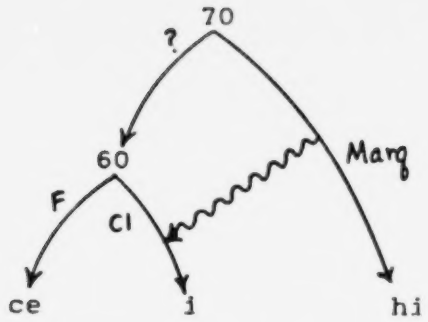
(9) ñánda **ce -i hi**
where of 2s you
'Where are you from?'

* ñánda ce -i

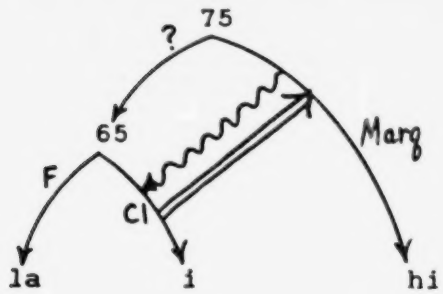
(10) koyo **la -i**
horse of 2s
'your horse'

We propose that prepositional phrases such as the one in (9) have the structure shown in (11a) and that prepositional phrases such as the one in (10) have the structures shown in (11b). We discuss the structure in Arc Pair Grammar terms (Johnson and Postal 1980). In both (11a) and (11b) the Marquee arc sponsors a clitic arc which shares a tail with the Flag arc. The sponsor relation is indicated in these diagrams by a wiggly arrow. The relation which node 60 bears to node 70 is left undetermined. (In phrase structure terms, node 60 would most likely be labeled P'.) In (11b), however, the clitic arc erases the Marquee arc. The erase relation is indicated in this diagram by a double arrow. The conditions for this erasure are only when a pronoun heads the Marquee arc. Therefore, in the surface structure of prepositional phrases with 'of', as in (11b), only one nominal appears overtly following the preposition: either the clitic pronoun (first or second person), or the non-pronominal complement. This complex prepositional phrase structure is relevant to later discussion.

(11) a.



b.



The clitic pronouns are used in the first NP position following the head of verb phrases (as subject), as shown in (12), of noun phrases (as possessor), as shown in (13), and in prepositional phrases, as seen above in (9-10).

(12) ɱánda onki -**o̲**
where go/1p,2p 2p
'Where are you (plural) going?'

(13) nithð -**a**
nose 1s
'my nose'

3 Indirect objects and incorporation

SJM is similar to English and other languages in that surface 3s in SJM sponsor prepositional phrase structures. The preposition **la̲**/**na̲** (which was glossed as 'of' above, but which is not glossed below) is the flag in such phrases in SJM, just as **to** is the flag in English. SJM is different from English, and many other languages, in two ways. First, the structure of prepositional phrases in

SJM is different, as we have seen above. Second, the preposition-clitic structure of surface 3s is obligatorily incorporated into the verb. Examples (14a-b) are clauses with surface 3s, and example (14c) is with a surface Comitative; note that the prepositions **la** and **ko** do not occur contiguous to their NP complements. The preposition-clitic structure is phonologically dependent on and not separable from the verb. This is represented by a hyphen before both the preposition as well as the clitic.

(14) a. he khi -**la** -**ø** karta **čilió**
she write/1s,3 3 letter
'she writes a letter to Julio'

b. he sikathě -**la** -**ø** pelota **čihveli**
she throw/1s,3 3 ball
'she throws the ball to Felix'

c. ti-síšá -**ko** -**ø** -a **Alberto**
CNT-work/1s,3 with 3 1s
'I am working with Alberto'

The examples in (15) show that not only the preposition is incorporated, but the preposition-clitic complex. This fact is the motivation for the constituent structure shown in (11).

(15) a. he khi -**la** -**i** karta
she write/1s,3 2s letter
'she writes a letter to you'

b. kó co -**la** -**i** Alma
how say/3 2s
'what did Alma say to you?'

c. kó co -**na** -**a** Alma
how say/3 1s
'what did Alma say to me?'

In the following sections we describe other constructions in which surface 3s occur in SJM.

4 Benefactive advancement

Benefactives optionally advance to 3 in SJM. The examples in (16) have final Benefactives. The examples in (17) are of Benefactives which are final 3s. As final and surface 3s, these nominals in (17) are flagged with **la**/**na**.

(16) a. Alma ti-vinta komida **nka -a ʔã**
CNT-make food for 1s me
'Alma is making food for me'

b. kohve ti-vithe čilič **nka -ø čihveli**
coffee CNT-plant for 3
'Julio is planting coffee for Felix'

(17) a. Alma ti-vinta **-la -ø** komida **čilič**
CNT-make 3 food
'Alma is making food for Julio'

b. čilič kohve ti-vithe **la -ø Ramõ**
coffee CNT-plant 3
'Julio is planting coffee for Ramon'

c. čisi ti-sišá **-na -a**
CNT-work/1s,3 1s
'Cecilia is working for me'

5 2-3 Retreat

5.1 General 2-3 Retreat

We identify many clauses in SJM as involving 2-3 Retreat. First, when the 2 of a transitive stratum is not third person, it obligatorily retreats to 3. Such a retreat might be merely one way of enforcing a language-specific constraint of the following type: If a heads a final 2-arc, then a is third person. We do not give the ungrammatical sentences here to fully document that such a constraint exists. Since no grammatical sentence with a first or second person as final 2 exists, there is no pattern on the basis of which one can proceed to construct examples to test.

Since the initial 2 is a final 3 in the examples in (18), the preposition **la** occurs in (18) but not in (19).[3]

(18) a. s-kini **-la -i**
FUT-send/1s,3 2s
'I will send you'

b. s-kotʔa **-la -i**
FUT-test/1s,3 2s
'I will test you'

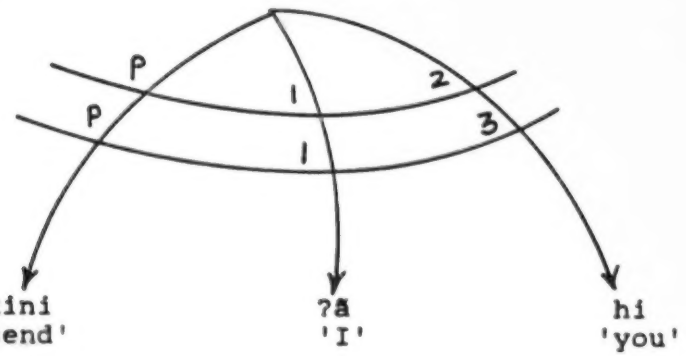
c. s-kotʔa **-na -a**
FUT-test/1s,3 1s
'he will test me'

(19) a. s-kot?a -a Ramõ
FUT-test/1s,3 1s
'I will test Ramon'

b. s-kot?a -a (he)
FUT-test/1s,c 1s him
'I will test him'

We claim that the structure of (18a) includes the following:

(20)



5.2 Governed 2-3 Retreat

There are a few verbs, both transitive and intransitive, which virtually require 2-3 Retreat, regardless of whether the direct object is third person or not.[4] The transitive verbs that pertain to this group include **hvithinki** 'follow', **konačã** 'trick', and **?nčé** 'hear'. Examples are given in (21). As (22) shows, if there is no 2, there is no 2-3 Retreat and therefore no preposition **la**.

(21) a. čihveli ti-hvithinki -**la** -**ø** **Maria**
CNT-follow 3
'Felix is following Mary'

b. čiliho kis-konačã -**la** -**ø**
DP-trick 3
'Alfonso tricked him'

c. miki ?nčé -**la** -**ø**
not hear/1s,3 3
'I don't hear him/her/it/them'

(22) miki ?nčé -a
not hear/1s,3 1s
'I don't hear'

The group of intransitive predicates which require 2-3 Retreat all determine initially unaccusative strata and include **nihñá** 'tired', **hva** 'awaken', and **iho** 'hungry'. Examples are given in (23).

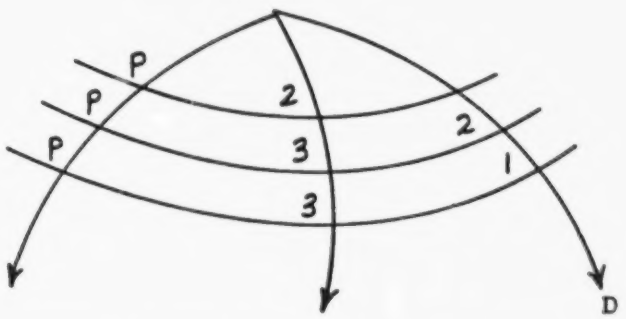
(23) a. hie nihña -**la** -**i**
already tired 2s
'you are already tired'

b. kó sí ko-hva -**la** -**i**
how do/1s,3 RP-awaken 2s
'how did you awaken?'

c. a ihó -**la** -**ø čihveli**
Q hungry 3
'Is Felix hungry?'

We propose that these clauses involve a silent dummy, as shown in (24).

(24)



This analysis requires some explanation. This dummy enters as a 2; it overruns the initial 2, inducing the demotion of the 2, but not putting it en chomage. The overrun relation is proposed in Johnson and Postal (1980). Perlmutter (1986) states it as follows:

> If two arcs A and B have the same tail and the same R-sign, and B's first coordinate index is +1 of A's last coordinate index, then B overruns A.

This relation is used for various purposes. Most importantly here, it is used by Berinstein (1986) in a reformulation of the Active Dummy Law. The Active Dummy Law, referred to in Perlmutter (1983b), and discussed in

Perlmutter (1983c), is modified by Berinstein to state as follows:

> A dummy must overrun some nominal if its departure stratum contains a nuclear term arc.

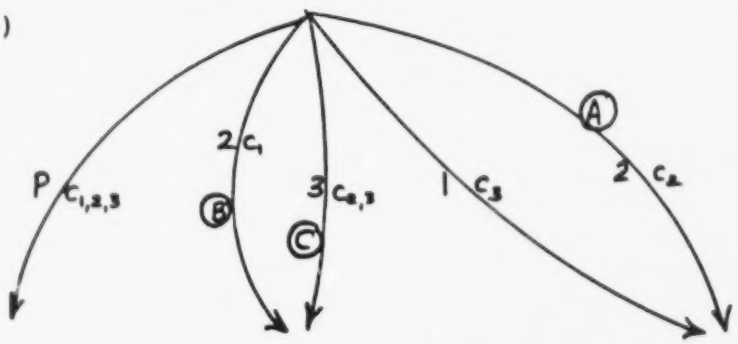
Our analysis is consistent with Berinstein's formulation of this law. The stratum preceding the entrance of the dummy contains a nuclear term arc, and the dummy overruns it.

The analysis shown in (24) is also consistent with the Final 1 Law and the Entrant Term Law. The latter is a new proposal by Bickford (1986); his tentative formulation is given below:

> For each pair of arcs A and B with tail c, where A is an entrant term arc [i.e., its head does not head a distinct term arc at a previous stratum in the clause in question] and B is a term arc, if the last coordinate of B is less than the first coordinate of A, then there is an entrant term arc (either A or another arc) which overruns B.

The diagram below is a relational network equivalent to the stratal diagram in (24).

(25)



According to the definition given above, arcs A and B are entrant term arcs, but arc C is not. The last coordinate of arc B (1) is less than the first coordinate of arc A (2). The Entrant Term Law claims that arc A (or some other arc) must overrun B, as it does.

6 Inversion

A small class of verbs in SJM_5 idiosyncratically occur primarily in Inversion clauses. The initial subject

occurs only as a final indirect object. Predicates which belong to this class include the verbs **mehē** 'want' and **sasē** 'like'. The examples in (26) illustrate these verbs with nominal direct objects, and those in (27) illustrate them with clausal direct objects.

(26) a. **mehē -nạ -a** hnko čho
want 1s one radio
'I want a radio'

b. **Alma** **sasē -lạ -Ø** nohmá
like 3 beans
'Alma likes beans'

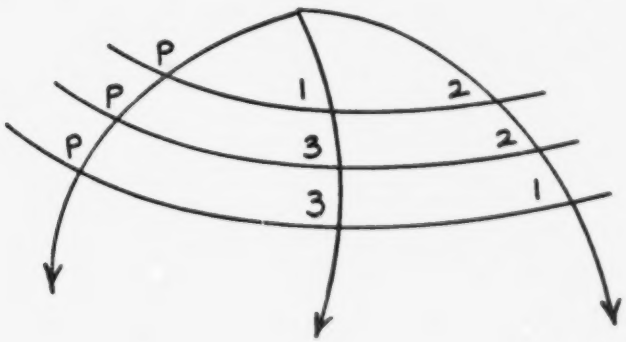
(27) a. **sasē -lạ -Ø khē** **čihveli**
like 3 eat/1s,3
'Felix likes to eat'

b. **mehē (-lạ -Ø) khē** **čihveli**
want 3 eat/1s,3
'Felix wants to eat'

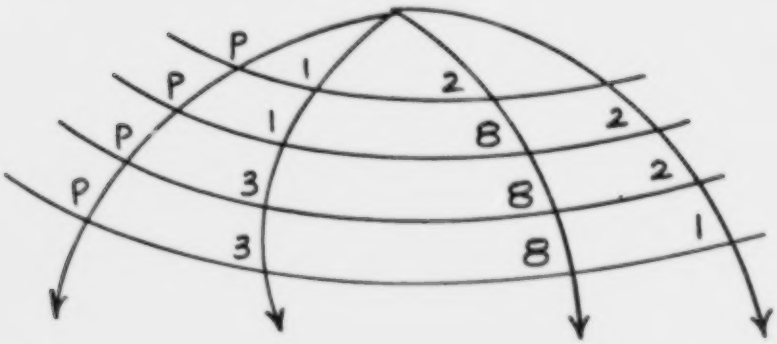
The optionality of **lạ** in (27b) may indicate that Inversion is possible but not necessary under certain conditions.

It is unclear at this time whether the examples in (27) are of personal inversion or impersonal inversion. Both analyses are represented in (28). The impersonal inversion analysis given in (28b) is again consistent with the Active Dummy Law, the Entrant Term Law, and the Final 1 Law. In section 6 we discuss examples in which Inversion interacts with 2-3 Retreat; in those cases the clause is most certainly impersonal.

(28) a. Personal Inversion



b. Impersonal Inversion



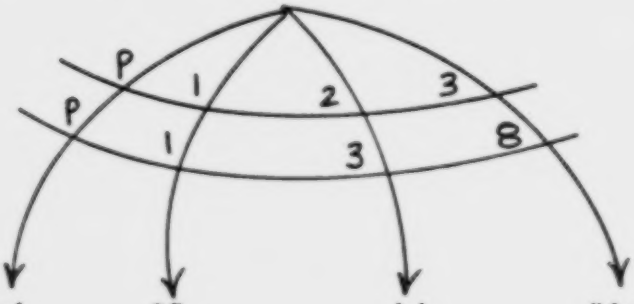
7 3-chomeurs

It is not difficult to imagine that there exist in SJM sentences in which more than one indirect object must occur, given the structures posited above. We discuss two types of these sentences in this section.

An example with an initial indirect object and also first or second person initial 2 is given in (29). The structure which (29) is claimed to have is given in (30).

(29) s-kini -**ko** -**Ø** -l**a** -i **čisi**
FUT-send/1s,3 3 2s
'I will send you to Cecilia'

(30)



kini 'send' ʔă 'I' hi 'you' čisi 'Cecilia'

The retreat of the initial 2 to 3 puts the initial 3 en chomage. The initial 2 is the final 3 and incorporates as expected. The preposition associated with the 3-chomeur is **ko** 'with' rather than **la**, and is incorporated. The following informal generalization can be made (anticipating some facts which follow):

(31) A nominal b which heads an B-arc having a

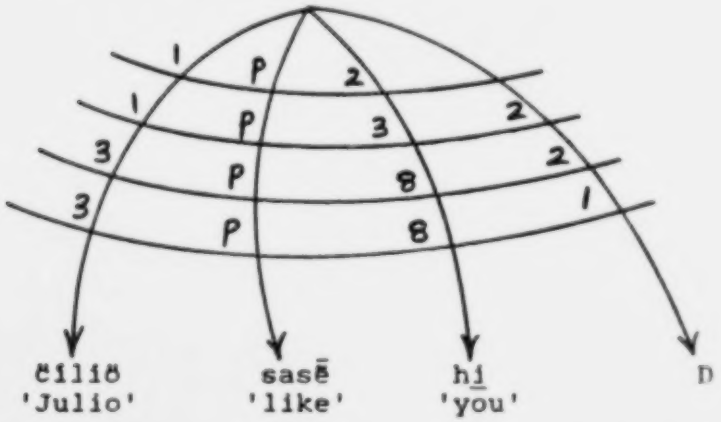
3-arc predecessor in the first stratum is flagged with **ko**.

This flagging rule therefore crucially makes reference to both the final stratum and the initial stratum.

Another situation in which 3-chomeurs are expected to arise is when the initial 2 of an Inversion predicate is not third person. Both Inversion and 2-3 Retreat occur. An example is given in (32) and the proposed analysis in (33).

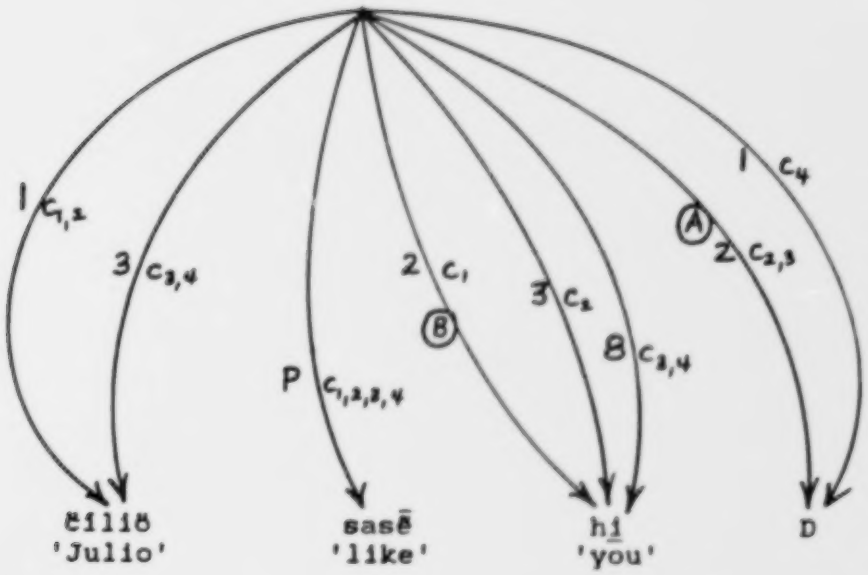
(32) čiliö sasē -la -Ø **nka** -i **hi**
like 3 2s you
'Julio likes you'

(33)



The retreat of the initial 1 to 3 puts the non-initial 3 en chomage. It is not necessary to stipulate that 2-3 Retreat occurs 'before' Inversion in (32) since the 'reverse' order would violate the Entrant Term Law. To see that this is so, consider first the relational network equivalent to (33).

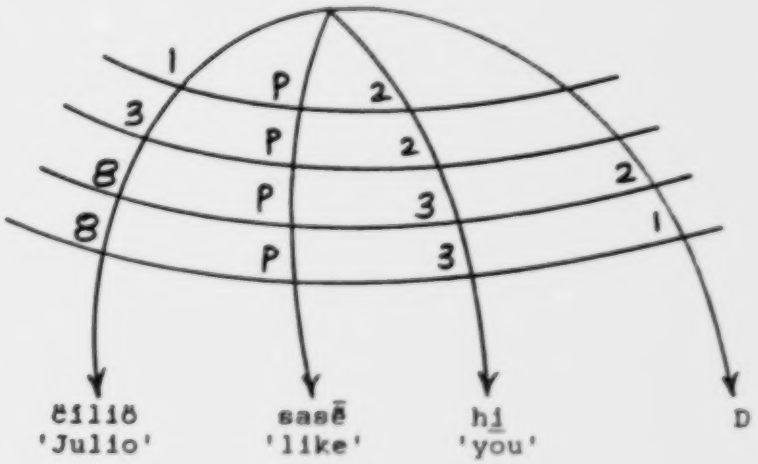
(34)

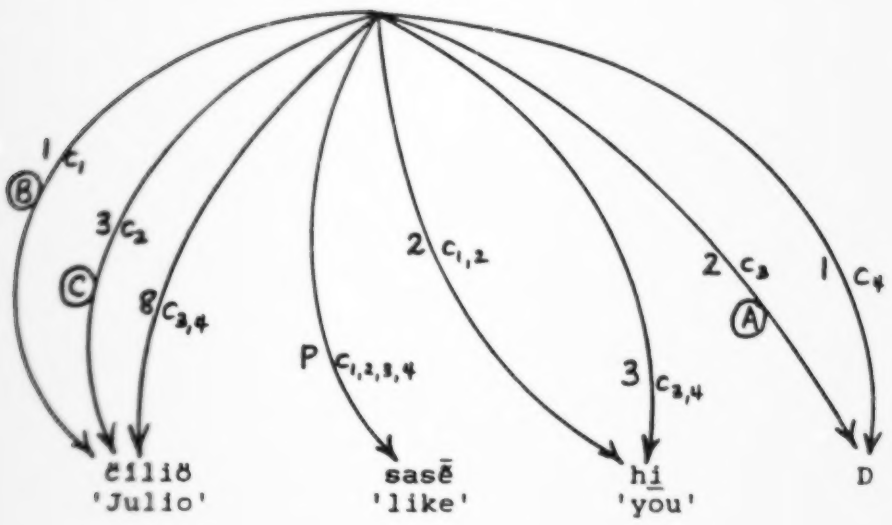


Arc A and Arc B are the relevant arcs, just as in the discussion of (24) above. This structure satisfies the Entrant Term Law in the same way.

Structure (35), in which the 'reverse' order is attempted, violates this law since the dummy does not head an arc which overruns an arc headed by 'Julio'.

(35)





In (35) Arc A is the relevant entrant term arc. Since Arc A does not overrun Arcs B and C, this structure violates the Entrant Term Law. The Mazatec facts are therefore explained by the interaction of these principles.

In (32) the 3-chomeur is flagged with the preposition **nka** 'for', which does <u>not</u> incorporate. The following generalization can be stated:

(36) A nominal <u>b</u> which heads an 8-arc having a 3-arc local predecessor and a remote predecessor which is not a 3-arc is flagged with **nka**.

This flagging rule makes reference to both the final stratum and two nonfinal strata.

8 Conclusion

At first blush many clauses in Mazatec appear to be strange and unlike those of languages with which we are more familiar. It has been shown here that these characteristics result from a combination of fairly familiar constructions and phenomena: (a) prepositional phrases, (b) incorporation, (c) advancements and retreats, and (d) impersonal constructions. The prepositional phrases have two uncommon properties: (a) the internally complex structure, and (b) the suppletive allomorphy of the preposition 'of'. The incorporation facts are interesting because (a) incorporation is obligatory, and (b) the preposition-complex, rather than simply the preposition, is incorporated. Once

we take notice of these common phenomena and some of their less common characteristics, Mazatec begins to look more familiar.

We have claimed that many sentences in Mazatec contain surface 3s which do not correspond to what have come to be called 'notional indirect objects'. The surface 3s in Mazatec correspond to intial 3s, initial Benefactives, initial 2s, and initial 1s. The conditions under which 3s are claimed to occur sometimes interact, in predictable ways, with the result that 3-chomeurs occur. The fact that proposed laws such as the Entrant Term Law and the Active Dummy Law make correct predictions for the Mazatec facts provides support for these laws.

Notes

1. Some topics discussed in this preliminary report were presented at the Conference on Relational Grammar and Grammatical Relations held at Ohio State University, Columbus, Ohio, in May of 1986, and at a technical forum of the Summer Institute of Linguistics in Tucson, Arizona in March of 1986. We thank the audiences at these presentations for their comments and questions. We also thank Peter Constable and Albert Bickford for their helpful suggestions on earlier drafts of this paper.

The following abbreviations are used: 1s -- first person singular, 2s -- second person singular, 3 -- third person, 1pi -- first person plural inclusive, 1pe -- first person plural exclusive, 1p -- first person plural (inclusive or exclusive), 2p -- second person plural; CNT -- Continuative, DP -- Distant Past, FUT -- Future, RP -- Recent Past, (unmarked tense/aspect = timeless aspect), Q -- question word. The following tone markings are used: a̲ -- 4 (low) tone, á -- 1 (high) tone, a̋ -- rising tone (either 4-2 or 3-1), a -- 3 tone, ā -- 2 tone. The following abbreviations are used in relational networks and stratal diagrams: Cl -- Clitic, D -- Dummy, F -- Flag, Marq -- Marquee, P -- Predicate, 1 -- subject, 2 -- direct object, 3 -- indirect object, 8 -- chomeur.

2. Clitic pronouns fuse with the preceding element. The examples in this paper give the underlying forms of the verbs, prepositions, and pronouns, rather than the fused forms. The fusion of clitic pronouns with verbs is different from that with **la̲/na̲** only in the second person singular. The following chart gives the phonetic forms of the preposition **la̲/na̲** followed by the clitic pronouns.

preposition	pronoun	person	phonetic form
la	ø	3	la
la	i	2s	le
na	a	1s	na
na	á	1pi	ná
na	hẽ	1pe	nahẽ
na	o	2p	no

While we take these pronominal forms to be (clitic) pronouns throughout this paper because they occur following three major heads (verbs, nouns, and prepositions), an alternative would be to claim that they are agreement affixes rather than pronouns. Just what empirical difference(s) these alternative analyses might make elsewhere in the grammar is not clear to us.

3. It is true for SJM, but apparently not for all other Mazatec languages, that the subject pronoun is sometimes omitted when there is preposition incorporation. We are not able to fully discuss these facts at this time.

4. Apparently it is optional when the 2 is of a certain type, as in the following examples:

(i) miki ?nc̣é (-la -ø) kó co čiliš
not hear/1s,3 how say/1s,3
'I don't hear what Julio is saying'

(ii) miki ?nc̣é (-la -ø) so ši ti-one
not hear/1s,3 song REL CNT-sound
'I don't hear the song that is playing'

5. An initial 1 is not necessary with the verb 'want', and so the verb also occurs in a structure without Inversion.

(iii) mehẽ sa niño hndé
want more tortillas here
'more tortillas are wanted here'

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